SEQUENCE LISTING

<110> Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.

<120> Novel means and methods for the preparation and activation of nucleoside and nucleotide based drugs

<130> B3270PCT

<140> PCT/EP99/00945
<141> 1999-02-12

<150> EP 98 10 2546.3
<151> 1998-02-13

<160> 15

<170> PatentIn Ver. 2.1

<210> 1
<211> 240
<212> PRT
<213> African swine fever virus

<400> 1

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 1               5                  10                  15

Ser Thr Gln Ala Met Arg Leu Lys Lys Ala Leu Glu Cys Met Asp Tyr
            20                  25                  30

Asn Ala Val Cys Ile Arg Phe Pro Asn Pro Asp Thr Thr Thr Gly Gly
        35                  40                  45

Leu Ile Leu Gln Val Leu Asn Lys Met Thr Glu Met Ser Ser Glu Gln
    50                  55                  60

Leu His Lys Leu Phe Thr Lys His His Ser Glu Phe Ser Ala Glu Ile
65                  70                  75                  80

Ala Ala Leu Leu Lys Leu Asn Phe Ile Val Ile Val Asp His Tyr Ile
                85                  90                  95

Trp Ser Gly Leu Ala Tyr Ala Gln Ala Asp Gly Ile Thr Ile Glu Thr
            100                 105                 110

Lys Asn Ile Phe Lys Pro Asp Tyr Thr Phe Phe Leu Ser Ser Lys Lys
        115                 120                 125

Pro Leu Asn Glu Lys Pro Leu Thr Leu Gln Arg Leu Phe Glu Thr Lys
    130                 135                 140

Glu Lys Gln Glu Thr Ile Phe Thr Asn Phe Thr Ile Ile Met Asn Asp
145                 150                 155                 160

Val Pro Lys Asn Arg Leu Cys Ile Ile Pro Ala Thr Leu Asn Lys Glu
                165                 170                 175
```

Ile Ile His Thr Met Ile Leu Thr Lys Thr Ile Lys Val Phe Asp Asn
180 185 190

Asn Ser Cys Leu Asn Tyr Ile Lys Met Tyr Asp Asp Lys Tyr Leu Asn
195 200 205

Val Gln Asp Leu Asn Leu Phe Asp Phe Asp Trp Gln Lys Cys Ile Glu
210 215 220

Asp Asn Asn Asp Lys Glu Glu Tyr Asp Asp Asp Asp Gly Phe Ile Ile
225 230 235 240

<210> 2
<211> 212
<212> PRT
<213> Bacillus subtilis

<400> 2
Met Ser Gly Leu Phe Ile Thr Phe Glu Gly Pro Glu Gly Ala Gly Lys
1 5 10 15

Thr Thr Val Leu Gln Glu Ile Lys Asn Ile Leu Thr Ala Glu Gly Leu
20 25 30

Gln Val Met Ala Thr Arg Glu Pro Gly Gly Ile Asp Ile Ala Glu Gln
35 40 45

Ile Arg Glu Val Ile Leu Asn Glu Asn Asn Ile Leu Met Asp Pro Lys
50 55 60

Thr Glu Ala Leu Leu Tyr Ala Ala Ala Arg Arg Gln His Leu Val Glu
65 70 75 80

Lys Val Lys Pro Ala Leu Glu Gln Gly Phe Ile Val Leu Cys Asp Arg
85 90 95

Phe Ile Asp Ser Pro Leu Ala Tyr Gln Gly Tyr Ala Arg Gly Leu Gly
100 105 110

Ile Asp Glu Val Leu Ser Ile Asn Glu Phe Ala Ile Gly Asp Met Met
115 120 125

Pro His Val Thr Val Tyr Phe Ser Ile Asp Pro Glu Glu Gly Leu Lys
130 135 140

Arg Ile Tyr Ala Asn Gly Ser Arg Glu Lys Asn Arg Leu Asp Leu Glu
145 150 155 160

Lys Leu Asp Phe His Thr Lys Val Gln Glu Gly Tyr Gln Glu Leu Met
165 170 175

Lys Arg Phe Pro Glu Arg Phe His Ser Val Asp Ala Gly Gln Ser Lys
180 185 190

```
Asp Leu Val Val Gln Asp Val Leu Lys Val Ile Asp Glu Ala Leu Lys
        195                 200                 205

Lys Ile Gln Leu
    210
```

<210> 3
<211> 213
<212> PRT
<213> Escherichia coli

<400> 3

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Met Arg Ser Lys Tyr Ile Val Ile Glu Gly Leu Glu Gly Ala Gly Lys
  1               5                  10                  15

Thr Thr Ala Arg Asn Val Val Val Glu Thr Leu Glu Gln Leu Gly Ile
             20                  25                  30

Arg Asp Met Val Phe Thr Arg Glu Pro Gly Gly Thr Gln Leu Ala Glu
         35                  40                  45

Lys Leu Arg Ser Leu Val Leu Asp Ile Lys Ser Val Gly Asp Glu Val
     50                  55                  60

Ile Thr Asp Lys Ala Glu Val Leu Met Phe Tyr Ala Ala Arg Val Gln
 65                  70                  75                  80

Leu Val Glu Thr Val Ile Lys Pro Ala Leu Ala Asn Gly Thr Trp Val
                 85                  90                  95

Ile Gly Asp Arg His Asp Leu Ser Thr Gln Ala Tyr Gln Gly Gly Gly
            100                 105                 110

Arg Gly Ile Asp Gln His Met Leu Ala Thr Leu Arg Asp Ala Val Leu
        115                 120                 125

Gly Asp Phe Arg Pro Asp Leu Thr Leu Tyr Leu Asp Val Thr Pro Glu
    130                 135                 140

Val Gly Leu Lys Arg Ala Arg Ala Arg Gly Glu Leu Asp Arg Ile Glu
145                 150                 155                 160

Gln Glu Ser Phe Asp Phe Phe Asn Arg Thr Arg Ala Arg Tyr Leu Glu
                165                 170                 175

Leu Ala Ala Gln Asp Lys Ser Ile His Thr Ile Asp Ala Thr Gln Pro
            180                 185                 190

Leu Glu Ala Val Met Asp Ala Ile Arg Thr Thr Val Thr His Trp Val
        195                 200                 205

Lys Glu Leu Asp Ala
    210
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<210> 4
<211> 210
<212> PRT
<213> Haemophilus influenzae

<400> 4
Met Lys Gly Lys Phe Ile Val Ile Glu Gly Leu Glu Gly Ala Gly Lys
1 5 10 15

Ser Ser Ala His Gln Ser Val Val Arg Val Leu His Glu Leu Gly Ile
20 25 30

Gln Asp Val Val Phe Thr Arg Glu Pro Gly Gly Thr Pro Leu Ala Glu
35 40 45

Lys Leu Arg His Leu Ile Lys His Glu Thr Glu Glu Pro Val Thr Asp
50 55 60

Lys Ala Glu Leu Leu Met Leu Tyr Ala Ala Arg Ile Gln Leu Val Glu
65 70 75 80

Asn Val Ile Lys Pro Ala Leu Met Gln Gly Lys Trp Val Val Gly Asp
85 90 95

Arg His Asp Met Ser Ser Gln Ala Tyr Gln Gly Gly Gly Arg Gln Leu
100 105 110

Asp Pro His Phe Met Leu Thr Leu Lys Glu Thr Val Leu Gly Asn Phe
115 120 125

Glu Pro Asp Leu Thr Ile Tyr Leu Asp Ile Asp Pro Ser Val Gly Leu
130 135 140

Ala Arg Ala Arg Gly Arg Gly Glu Leu Asp Arg Ile Glu Gln Met Asp
145 150 155 160

Leu Asp Phe Phe His Arg Thr Arg Ala Arg Tyr Leu Glu Leu Val Lys
165 170 175

Asp Asn Pro Lys Ala Val Val Ile Asn Ala Glu Gln Ser Ile Glu Leu
180 185 190

Val Gln Ala Asp Ile Glu Ser Ala Val Lys Asn Trp Trp Lys Ser Asn
195 200 205

Glu Lys
210

<210> 5
<211> 212
<212> PRT
<213> Homo sapiens

<400> 5
Met Ala Ala Arg Arg Gly Ala Leu Ile Val Leu Glu Gly Val Asp Arg

```
  1               5                  10                  15

Ala Gly Lys Ser Thr Gln Ser Arg Lys Leu Val Glu Ala Leu Cys Ala
            20                  25                  30

Ala Gly His Arg Ala Glu Leu Leu Arg Phe Pro Glu Arg Ser Thr Glu
        35                  40                  45

Ile Gly Lys Leu Leu Ser Ser Tyr Leu Gln Lys Lys Ser Asp Val Glu
    50                  55                  60

Asp His Ser Val His Leu Leu Phe Ser Ala Asn Arg Trp Glu Gln Val
65                  70                  75                  80

Pro Leu Ile Lys Glu Lys Leu Ser Gln Gly Val Thr Leu Val Val Asp
                85                  90                  95

Arg Tyr Ala Phe Ser Gly Val Ala Phe Thr Gly Ala Lys Glu Asn Phe
            100                 105                 110

Ser Leu Asp Trp Cys Lys Gln Pro Asp Val Gly Leu Pro Lys Pro Asp
        115                 120                 125

Leu Val Leu Phe Leu Gln Leu Gln Leu Ala Asp Ala Ala Lys Arg Gly
    130                 135                 140

Ala Phe Gly His Glu Arg Tyr Glu Asn Gly Ala Phe Gln Glu Arg Ala
145                 150                 155                 160

Leu Arg Cys Phe His Gln Leu Met Lys Asp Thr Thr Leu Asn Trp Lys
                165                 170                 175

Met Val Asp Ala Ser Lys Arg Leu Glu Ala Val His Glu Glu Leu Arg
            180                 185                 190

Val Leu Ser Glu Asp Ala Ile Arg Thr Ala Thr Glu Lys Pro Leu Gly
        195                 200                 205

Glu Leu Trp Lys
    210
```

<210> 6
<211> 188
<212> PRT
<213> Methanococcus jannaschii

<400> 6

```
Met Val Asp Asn Met Phe Ile Val Phe Glu Gly Ile Asp Gly Ser Gly
  1               5                  10                  15

Lys Thr Thr Gln Ser Lys Leu Leu Ala Lys Lys Met Asp Ala Phe Trp
            20                  25                  30

Thr Tyr Glu Pro Ser Asn Ser Leu Val Gly Lys Ile Ile Arg Glu Ile
        35                  40                  45
```

```
Leu Ser Gly Lys Thr Glu Val Asp Asn Lys Thr Leu Ala Leu Leu Phe
     50                  55                  60

Ala Ala Asp Arg Ile Glu His Thr Lys Leu Ile Lys Glu Glu Leu Lys
 65                  70                  75                  80

Lys Arg Asp Val Val Cys Asp Arg Tyr Leu Tyr Ser Ser Ile Ala Tyr
                85                  90                  95

Gln Ser Val Ala Gly Val Asp Glu Asn Phe Ile Lys Ser Ile Asn Arg
            100                 105                 110

Tyr Ala Leu Lys Pro Asp Ile Val Phe Leu Leu Ile Val Asp Ile Glu
        115                 120                 125

Thr Ala Leu Lys Arg Val Lys Thr Lys Asp Ile Phe Glu Lys Lys Asp
    130                 135                 140

Phe Leu Lys Lys Val Gln Asp Lys Tyr Leu Glu Leu Ala Glu Glu Tyr
145                 150                 155                 160

Asn Phe Ile Val Ile Asp Thr Thr Lys Lys Ser Val Glu Glu Val His
                165                 170                 175

Asn Glu Ile Ile Gly Tyr Leu Lys Asn Ile Pro His
            180                 185
```


<210> 7
<211> 227
<212> PRT
<213> Mus musculus

<400> 7

```
Met Ala Ser Arg Arg Gly Ala Leu Ile Val Leu Glu Gly Val Asp Arg
  1               5                  10                  15

Ala Gly Lys Thr Thr Gln Gly Leu Lys Leu Val Thr Ala Leu Cys Ala
            20                  25                  30

Ser Gly His Arg Ala Glu Leu Leu Arg Phe Pro Glu Arg Ser Thr Glu
        35                  40                  45

Ile Gly Lys Leu Leu Asn Ser Tyr Leu Glu Lys Lys Thr Glu Leu Glu
    50                  55                  60

Asp His Ser Val His Leu Leu Phe Ser Ala Asn Arg Trp Glu Gln Val
65                  70                  75                  80

Pro Leu Ile Lys Ala Lys Leu Asn Gln Gly Val Thr Leu Val Leu Asp
                85                  90                  95

Arg Tyr Ala Phe Ser Gly Val Ala Phe Thr Gly Ala Lys Glu Asn Phe
            100                 105                 110

Ser Leu Asp Trp Cys Lys Gln Pro Asp Val Gly Leu Pro Lys Pro Asp
        115                 120                 125
```

```
Leu Ile Leu Phe Leu Gln Leu Gln Leu Leu Asp Ala Ala Ala Arg Gly
    130                 135                 140

Glu Phe Gly Leu Glu Arg Tyr Glu Thr Gly Thr Phe Gln Lys Gln Val
145                 150                 155                 160

Leu Leu Cys Phe Gln Gln Leu Met Glu Glu Lys Asn Leu Asn Trp Lys
                165                 170                 175

Val Val Asp Ala Ser Lys Arg Thr Pro Ser Glu Thr Leu His Arg Gly
            180                 185                 190

His Trp Gly Ser Tyr Gly Asn Lys Ser Ala Ser Ile Ala Asn Thr Ile
        195                 200                 205

Phe Trp Phe Cys Lys Arg Leu Val Glu Gly Ser His Leu Tyr Thr Ile
    210                 215                 220

Ser Arg Ser
225
```

<210> 8
<211> 210
<212> PRT
<213> Mycoplasma pneumoniae

<400> 8

```
Met Lys Gln Gly Val Phe Val Ala Ile Glu Gly Val Asp Gly Ala Gly
  1               5                  10                  15

Lys Thr Val Leu Leu Glu Ala Phe Lys Gln Arg Phe Pro Gln Ser Phe
            20                  25                  30

Leu Gly Phe Lys Thr Leu Phe Ser Arg Glu Pro Gly Gly Thr Pro Leu
        35                  40                  45

Ala Glu Lys Ile Arg Ala Leu Leu Leu His Glu Ala Met Glu Pro Leu
    50                  55                  60

Thr Glu Ala Tyr Leu Phe Ala Ala Ser Arg Thr Glu His Val Arg Gln
65                  70                  75                  80

Leu Ile Gln Pro Ala Leu Gln Gln Lys Gln Leu Val Ile Val Asp Arg
                85                  90                  95

Phe Val Trp Ser Ser Tyr Ala Tyr Gln Gly Leu Ile Lys Lys Val Gly
            100                 105                 110

Leu Asp Val Val Lys Lys Leu Asn Ala Asp Ala Val Gly Asp Ser Met
        115                 120                 125

Pro Asp Phe Thr Phe Ile Val Asp Cys Asp Phe Glu Thr Ala Leu Asn
    130                 135                 140

Arg Met Ala Lys Arg Gly Gln Asp Asn Leu Leu Asp Asn Thr Val Lys
```

```
145                 150                 155                 160

Lys Gln Ala Asp Phe Asn Thr Met Arg Gln Tyr Tyr His Ser Leu Val
                165                 170                 175

Asp Asn Lys Arg Val Phe Leu Leu Asp Gly Gln Asn Gln Thr Gly Cys
            180                 185                 190

Leu Glu Gln Phe Ile Glu Gln Leu Ser Gln Cys Leu Thr Gln Pro Thr
        195                 200                 205

Leu Ser
    210
```

<210> 9
<211> 210
<212> PRT
<213> Mycoplasma genitalium

<400> 9

```
Met Asn Lys Gly Val Phe Val Val Ile Glu Gly Val Asp Gly Ala Gly
  1               5                  10                  15

Lys Thr Ala Leu Ile Glu Gly Phe Lys Lys Leu Tyr Pro Thr Lys Phe
            20                  25                  30

Leu Asn Tyr Gln Leu Thr Tyr Thr Arg Glu Pro Gly Gly Thr Leu Leu
        35                  40                  45

Ala Glu Lys Ile Arg Gln Leu Leu Leu Asn Glu Thr Met Glu Pro Leu
    50                  55                  60

Thr Glu Ala Tyr Leu Phe Ala Ala Ala Arg Thr Glu His Ile Ser Lys
65                  70                  75                  80

Leu Ile Lys Pro Ala Ile Glu Lys Glu Gln Leu Val Ile Ser Asp Arg
                85                  90                  95

Phe Val Phe Ser Ser Phe Ala Tyr Gln Gly Leu Ser Lys Lys Ile Gly
            100                 105                 110

Ile Asp Thr Val Lys Gln Ile Asn His His Ala Leu Arg Asn Met Met
        115                 120                 125

Pro Asn Phe Thr Phe Ile Leu Asp Cys Asn Phe Lys Glu Ala Leu Gln
    130                 135                 140

Arg Met Gln Lys Arg Gly Asn Asp Asn Leu Leu Asp Glu Phe Ile Lys
145                 150                 155                 160

Gly Lys Asn Asp Phe Asp Thr Val Arg Ser Tyr Tyr Leu Ser Leu Val
                165                 170                 175

Asp Lys Lys Asn Cys Phe Leu Ile Asn Gly Asp Asn Lys Gln Glu His
            180                 185                 190
```

```
Leu Glu Lys Phe Ile Glu Leu Leu Thr Arg Cys Leu Gln Gln Pro Thr
        195                 200                 205

His Tyr
    210
```

<210> 10
<211> 210
<212> PRT
<213> Schizosaccharomyces pombe

<400> 10

```
Met Ser Lys Gln Asn Arg Gly Arg Leu Ile Val Ile Glu Gly Leu Asp
  1               5                  10                  15

Arg Ser Gly Lys Ser Thr Gln Cys Gln Leu Leu Val Asp Lys Leu Ile
             20                  25                  30

Leu Asn Met Lys Arg Leu Lys Leu Phe Lys Phe Pro Asp Arg Thr Thr
         35                  40                  45

Ala Ile Gly Lys Lys Ile Asp Asp Tyr Leu Thr Glu Ser Val Gln Leu
     50                  55                  60

Asn Asp Gln Val Ile His Leu Leu Phe Ser Ala Asn Arg Trp Glu Pro
 65                  70                  75                  80

Ser Ile Tyr Tyr Arg Ala Asn Gln Gln Arg Cys Asn Cys Ile Leu Asp
                 85                  90                  95

Arg Tyr Ala Phe Ser Gly Ile Ala Phe Ser Ala Ala Lys Gly Leu Asp
            100                 105                 110

Trp Glu Trp Cys Lys Ser Pro Asp Arg Gly Leu Thr Arg Pro Asp Leu
        115                 120                 125

Val Ile Phe Leu Asn Val Asp Pro Arg Ile Ala Ala Thr Arg Gly Gln
    130                 135                 140

Tyr Gly Glu Glu Arg Tyr Glu Lys Ile Glu Met Gln Glu Lys Val Leu
145                 150                 155                 160

Lys Asn Leu Gln Arg Leu Gln Lys Glu Phe Arg Glu Glu Gly Leu Glu
                165                 170                 175

Phe Ile Thr Leu Asp Ala Ser Ser Tyr Ala Leu Glu Asp Val Asp Ser
            180                 185                 190

Gln Ile Val Asp Leu Val Ser Asn Val Asn Ile His Glu Thr Leu Asp
        195                 200                 205

Val Leu
    210
```

<210> 11

<211> 204
<212> PRT
<213> Vaccinia virus

<400> 11

```
Met Ser Arg Gly Ala Leu Ile Val Phe Glu Gly Leu Asp Lys Ser Gly
  1               5                  10                  15

Lys Thr Thr Gln Cys Met Asn Ile Met Glu Ser Ile Pro Ala Asn Thr
             20                  25                  30

Ile Lys Tyr Leu Asn Phe Pro Gln Arg Ser Thr Val Thr Gly Lys Met
         35                  40                  45

Ile Asp Asp Tyr Leu Thr Arg Lys Lys Thr Tyr Asn Asp His Ile Val
     50                  55                  60

Asn Leu Leu Phe Cys Ala Asn Arg Trp Glu Phe Ala Ser Phe Ile Gln
 65                  70                  75                  80

Glu Gln Leu Glu Gln Gly Ile Thr Leu Ile Val Asp Arg Tyr Ala Phe
                 85                  90                  95

Ser Gly Val Ala Tyr Ala Ala Ala Lys Gly Ala Ser Met Thr Leu Ser
            100                 105                 110

Lys Ser Tyr Glu Ser Gly Leu Pro Lys Pro Asp Leu Val Ile Phe Leu
        115                 120                 125

Glu Ser Gly Ser Lys Glu Ile Asn Arg Asn Val Gly Glu Glu Ile Tyr
    130                 135                 140

Glu Asp Val Thr Phe Gln Gln Lys Val Leu Gln Glu Tyr Lys Lys Met
145                 150                 155                 160

Ile Glu Glu Gly Asp Ile His Trp Gln Ile Ile Ser Ser Glu Phe Glu
                165                 170                 175

Glu Asp Val Lys Lys Glu Leu Ile Lys Asn Ile Val Ile Glu Ala Ile
            180                 185                 190

His Thr Val Thr Gly Pro Val Gly Gln Leu Trp Met
        195                 200
```

<210> 12
<211> 205
<212> PRT
<213> Variola virus

<400> 12

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Met Ser Arg Gly Ala Leu Ile Val Phe Glu Gly Leu Asp Lys Ser Gly
  1               5                  10                  15

Lys Thr Thr Gln Cys Met Asn Ile Met Glu Ser Ile Pro Thr Asn Thr
             20                  25                  30
```

```
Ile Lys Tyr Leu Asn Phe Pro Gln Arg Ser Thr Val Thr Gly Lys Met
         35                  40                  45

Ile Asp Asp Tyr Leu Thr Arg Lys Lys Thr Tyr Asn Asp His Ile Val
     50                  55                  60

Asn Leu Leu Phe Cys Ala Asn Arg Trp Glu Phe Ala Ser Phe Ile Gln
 65                  70                  75                  80

Glu Gln Leu Glu Gln Gly Ile Thr Leu Ile Val Asp Arg Tyr Ala Phe
                 85                  90                  95

Ser Gly Val Ala Tyr Ala Thr Ala Lys Gly Ala Ser Met Thr Leu Ser
            100                 105                 110

Lys Ser Tyr Glu Ser Gly Leu Pro Lys Pro Asp Leu Val Ile Phe Leu
        115                 120                 125

Glu Ser Gly Ser Lys Glu Ile Asn Arg Asn Val Gly Glu Glu Ile Tyr
    130                 135                 140

Glu Asp Val Ala Phe Gln Gln Lys Val Leu Gln Glu Tyr Lys Lys Met
145                 150                 155                 160

Ile Glu Glu Gly Glu Asp Ile His Trp Gln Ile Ile Ser Ser Glu Phe
                165                 170                 175

Glu Glu Asp Val Lys Lys Glu Leu Ile Lys Asn Ile Val Ile Glu Ala
            180                 185                 190

Ile His Thr Val Thr Gly Pro Val Gly Gln Leu Trp Met
        195                 200                 205
```

<210> 13
<211> 216
<212> PRT
<213> Saccharomyces cerevisiae

<400> 13

```
Met Met Gly Arg Gly Lys Leu Ile Leu Ile Glu Gly Leu Asp Arg Thr
  1               5                  10                  15

Gly Lys Thr Thr Gln Cys Asn Ile Leu Tyr Lys Lys Leu Gln Pro Asn
            20                  25                  30

Cys Lys Leu Leu Lys Phe Pro Glu Arg Ser Thr Arg Ile Gly Gly Leu
        35                  40                  45

Ile Asn Glu Tyr Leu Thr Asp Asp Ser Phe Gln Leu Ser Asp Gln Ala
    50                  55                  60

Ile His Leu Leu Phe Ser Ala Asn Arg Trp Glu Ile Val Asp Lys Ile
65                  70                  75                  80

Lys Lys Asp Leu Leu Glu Gly Lys Asn Ile Val Met Asp Arg Tyr Val
                85                  90                  95
```

Tyr Ser Gly Val Ala Tyr Ser Ala Ala Lys Gly Thr Asn Gly Met Asp
100 105 110

Leu Asp Trp Cys Leu Gln Pro Asp Val Gly Leu Leu Lys Pro Asp Leu
115 120 125

Thr Leu Phe Leu Ser Thr Gln Asp Val Asp Asn Asn Ala Glu Lys Ser
130 135 140

Gly Phe Gly Asp Glu Arg Tyr Glu Thr Val Lys Phe Gln Glu Lys Val
145 150 155 160

Lys Gln Thr Phe Met Lys Leu Leu Asp Lys Glu Ile Arg Lys Gly Asp
165 170 175

Glu Ser Ile Thr Ile Val Asp Val Thr Asn Lys Gly Ile Gln Glu Val
180 185 190

Glu Ala Leu Ile Trp Gln Ile Val Glu Pro Val Leu Ser Thr His Ile
195 200 205

Asp His Asp Lys Phe Ser Phe Phe
210 215

<210> 14
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no natural origin, hypothetical

<400> 14
ggaattccat atgcgcagta agtatatcgt c 31

<210> 15
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no natural origin, hypothetical

<400> 15
cgcggatcct catgcgtcca actccttcac ccag 34